



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,712	12/23/2005	Nobuhiro Higashihara	81872.0106	8642
26/021 7590 07/06/2009 HOGAN & HARTSON L.L.P. 1999 AVENUE OF THE STARS SUITE 1400 LOS ANGELES, CA 90067				
EXAMINER				
VAN, LUAN V				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
07/06/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ctkeyner@hhlaw.com
LAUSPTO@hhlaw.com
lbrivero@hhlaw.com

Office Action Summary

Application No.

10/562,712

Applicant(s)

HIGASHIHARA ET AL.

Examiner

LUAN V. VAN

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 11, 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date 12/23/05, 5/28/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of claims 1-5, 9, 10 and 12-14 in the reply filed on June 3, 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Status

Claims 1-5, 9, 10 and 12-14 are pending in the present application.

Claim Objections

Claim 5 is objected to because of the following informalities: the claim recites a "dielectric 10", however, it appears that the 10 is a typo. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita et al. (US patent 4053370).

Regarding claim 1, Yamashita et al. teaches a process for forming a metal plating film, comprising the steps of: preparing a base element having a convex curved surface (i.e., strip 12 on roll 14); depositing a metal plating film onto the convex curved surface of the base element (column 3 lines 25-39, Fig. 1); and detaching the metal plating film from the base element to obtain the metal plating film (column 3 lines 25-39).

Regarding claim 2, Yamashita et al. teaches wherein the base element has a cylindrical surface (i.e., surface of the strip 12 over the roll 14 is a cylindrical surface), and in a step for depositing the metal plating film onto the surface of the base element, a part of the surface of the base element is immersed in a plating solution in a plating bath (Fig. 1), and an electric field is applied between the base element and the plating bath (column 5 lines 17-21), while the base element turns on its axis.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Uriu et al. (US patent 5647966).

Uriu et al. teaches a process for manufacturing an electronic component, comprising: a step A for depositing a metal plating film 15 (Fig. 4) onto a surface of a base element 13 (Fig. 4); a step B for detaching the metal plating film from the base element (column 10 lines 40-51) and for mutually attaching the metal plating film with a dielectric sheet 19 (Fig. 7); and a step C for obtaining an electronic component having a portion with a conductor layer attached on a dielectric layer by heat treating the dielectric sheet having the formed metal plating film thereon (column 11 lines 1-13).

The temperature is inherently lower than a melting point of a metal forming the metal plating film, since the metal is not melted. Uriu et al. further notes that although a magnetic green sheet is preferably used in order to obtain a high impedance, an insulation sheet having dielectricity can also be used (column 9 lines 27-29).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. in view of Andricacos et al. (US patent 5789320).

Yamashita et al. teaches the method as described above. In addition, Yamashita et al. teaches a mask layer 42 for controlling a deposition area of the metal plating film. Yamashita et al. differs from the instant claims in that the reference does not explicitly teach the specific material of the masking layer of the instant claim.

Andricacos et al. teaches using a diamond-like carbon mask for plating applications, and that DLC is an insulating material whose corrosion resistance allows it to withstand strongly alkaline plating solutions (column 2 line 59 -- column 3 line 5). In addition, a DLC mask is much stiffer than typical photoresist (column 3 line 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the photoresist mask of Yamashita et al. with that DLC mask of Andricacos et al., because DLC is much stiffer than photoresist (column 3 line 1 of Andricacos et al.).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. in view of Ostwald et al. (US patent 4975160).

Yamashita et al. teaches the method as described above. Yamashita et al. differs from the instant claims in that the reference does not explicitly teach whether the metal plating film includes particles.

Ostwald et al. teaches incorporating ceramic particles in the metalization layer (Abstract) in order to improve the adhesion of the metal layer to the substrate (column 2 lines 6-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated the particles of Ostwald et al. in the metal layer of Yamashita et al., because it would improve the adhesion of the metal layer to the substrate (column 2 lines 6-20 of Ostwald et al.).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. (US patent 5647966) in view of Nakao et al. (US patent 6485591).

Uriu et al. teaches the method as described above. In addition, Uriu et al. teaches detaching the metal plating film from the base element and transferring to a resin film 16. While Uriu et al. teaches applying a paste containing a resin to form the magnetic green sheet, Uriu et al. does not disclose whether it is a dielectric material.

Nakao et al. teaches applying a ceramic slurry 35, i.e., dielectric slurry, to form a ceramic greenware sheet (Fig. 28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have been applied the ceramic slurry of Nakao et al. in the method of Uriu et al., because it would enable the formation of the multilayer laminated-ceramic electronic component. Furthermore, since Uriu et al. teaches that an insulation sheet having dielectricity can also be used (column 9 lines 27-29), it would have been obvious to one having ordinary skill in the art to have substituted the magnetic green

sheet with the insulation sheet as suggested by Uriu et al. in order to form a dielectric capacitor.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. (US patent 5647966) in view of Chen et al. (US pub 2001/0009724).

Uriu et al. teaches the method as described above. Yamashita et al. differs from the instant claims in that the reference does not explicitly teach the specific peak temperature of the heat treatment.

Chen et al. teaches metal coatings are typically annealed at elevated temperature to relieve stress in the coating (paragraph 6-8). For example, electroplated nickel is commonly annealed at 700°C (paragraph 8), which is which is higher than the recrystallizing temperature of the metal.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have heated the dielectric sheet having the metal film, as taught by Chen et al., in the method of Uriu et al., because it would relieve the stress in the metal film (paragraph 8 of Chen et al.).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. (US patent 5647966) in view of either Yamashita et al. (US patent 4053370) or Helms et al. (US patent 3414487).

Uriu et al. teaches the method as described above. Yamashita et al. differs from the instant claims in that the reference does not explicitly teach whether the base element has a cylindrical surface.

Yamashita et al. teaches a process for fabricating printed circuits comprising the step of electroplating a copper circuit pattern on a cylindrical surface 12 (Fig. 1). Helms et al. also teaches a method of manufacturing printed circuits comprising the step of electroplating a circuit pattern on the surface of a cylindrical drum (Column 4 lines 17-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have electroplated on a cylindrical surface, as taught by either Yamashita et al. or Helms et al., in the method of Yamashita et al., because the plating operation can be synchronized with other steps to realize the automation of the complete process (column 2 lines 12-17 of Yamashita et al.), and because it would provide a process for rapid and economical manufacture of circuit boards (column 1 lines 26-27 of Helms et al.).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. in view of Andricacos et al. (US patent 5789320).

Uriu et al. teaches the method as described above. Uriu et al. differs from the instant claims in that the reference does not explicitly teach the specific material of the masking layer of the instant claim.

Andricacos et al. teaches using a diamond-like carbon mask for plating applications, and that DLC is an insulating material whose corrosion resistance allows it to withstand strongly alkaline plating solutions (column 2 line 59 -- column 3 line 5). In addition, a DLC mask is much stiffer than typical photoresist (column 3 line 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the photoresist mask of Uriu et al. with that DLC mask of Andricacos et al., because DLC is much stiffer than photoresist (column 3 line 1 of Andricacos et al.).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. in view of Ostwald et al. (US patent 4975160).

Uriu et al. teaches the method as described above. Uriu et al. differs from the instant claims in that the reference does not explicitly teach whether the metal plating film includes particles.

Ostwald et al. teaches incorporating ceramic particles in the metalization layer (Abstract) in order to improve the adhesion of the metal layer to the substrate (column 2 lines 6-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated the particles of Ostwald et al. in the metal layer of Uriu et al., because it would improve the adhesion of the metal layer to the substrate (column 2 lines 6-20 of Ostwald et al.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUAN V. VAN whose telephone number is (571)272-8521. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Luan V Van/
Examiner, Art Unit 1795
June 30, 2009